

10/602,974

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FILE 'HCAPLUS' ENTERED AT 15:52:58 ON 22 OCT 2004

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FILE COVERS 1907 - 22 Oct 2004 VOL 141 ISS 17

FILE LAST UPDATED: 20 Oct 2004 (20041020/ED)

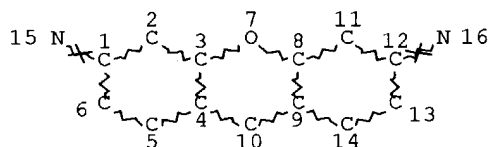
This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> d stat que

L3 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 15

NSPEC IS RC AT 16

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

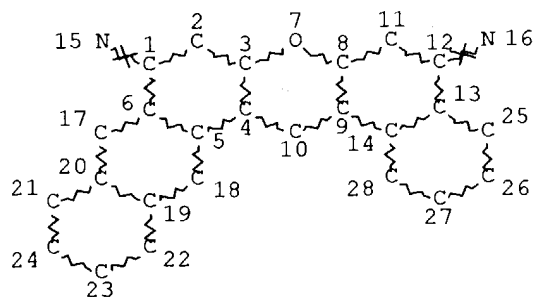
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L5 7546 SEA FILE=REGISTRY SSS FUL L3

L10 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 15
 NSPEC IS RC AT 16
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

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 L14 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L11

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=> d ibib abs hitstr l14 1-5

L14 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:485721 HCAPLUS Full-text

DOCUMENT NUMBER: 139:54287

TITLE: Sulfonated diarylrhodamine dyes for labeling polynucleotides

INVENTOR(S): Menchen, Steven M.; Benson, Scott C.; Lam, Joe Y. L.; Zhen, Weiguo; Sun, Daqing; Rosenblum, Barnett B.; Khan, Shaheer H.; Taing, Meng

PATENT ASSIGNEE(S): Applera Corporation, USA

SOURCE: U.S., 50 pp., Cont.-in-part of U.S. Ser. No. 556,040. CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6583168	B1	20030624	US 2000-724855	20001128
US 5936087	A	19990810	US 1997-978775	19971125
EP 1408090	A1	20040414	EP 2004-878	19981117
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
US 6111116	A	20000829	US 1998-199402	19981124
US 6221606	B1	20010424	US 2000-556040	20000420
US 2001011139	A1	20010802	US 2001-784943	20010214
US 6326153	B2	20011204		

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US 2002034761	A1	20020321	US 2001-969430	20011002
US 6566071	B2	20030520		
WO 2002044416	A2	20020606	WO 2001-US44475	20011127
WO 2002044416	A3	20021031		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002019896	A5	20020611	AU 2002-19896	20011127
EP 1339798	A2	20030903	EP 2001-998658	20011127

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004514727	T2	20040520	JP 2002-546764	20011127
US 2004072209	A1	20040415	US 2003-441950	20030520
US 2004096397	A1	20040520	US 2003-602974	20030624
JP 2004107331	A2	20040408	JP 2003-300011	20030825

PRIORITY APPLN. INFO.:

US 1997-978775	A3	19971125
US 1998-199402	A3	19981124
US 2000-556040	A2	20000420
EP 1998-958069	A3	19981117
JP 2000-522168	A3	19981117
US 2000-724855	A	20001128
US 2001-784943	A3	20010214
US 2001-969430	A1	20011002
WO 2001-US44475	W	20011127

OTHER SOURCE(S): MARPAT 139:54287

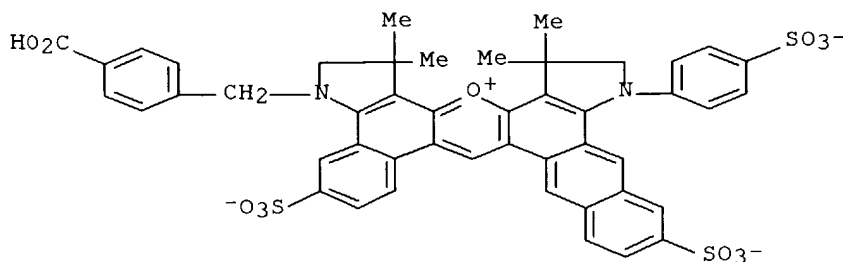
AB Sulfonated diarylrhodamine dyes are disclosed which are useful for fluorescent labeling of biomols. These energy transfer dyes may incorporate activating groups for covalent bond formation with nucleotides and polynucleotides. In examples, sulfonaphthoindoline methoxy derivs. were coupled and the products demethylated to provide the fluorescent rhodamines.

IT **547764-63-6P 547764-64-7P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; preparation of sulfonated diarylrhodamine dyes for labeling polynucleotides)

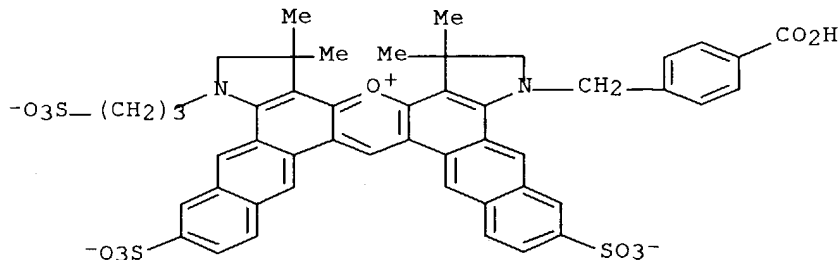
RN 547764-63-6 HCAPLUS

CN Benzo[g]naphtho[2,3-g']pyrano[2,3-e:6,5-e']diindol-8-ium, 5-[(4-carboxyphenyl)methyl]-5,6,7,9,10,11-hexahydro-7,7,9,9-tetramethyl-3,14-disulfo-11-(4-sulfohenyl)-, inner salt, ion(2-) (9CI) (CA INDEX NAME)



10/602,974

RN 547764-64-7 HCAPLUS
 CN Dinaphtho[2,3-g:2',3'-g']pyrano[2,3-e:6,5-e']diindol-9-ium,
 6-[(4-carboxyphenyl)methyl]-6,7,8,10,11,12-hexahydro-8,8,10,10-tetramethyl-
 3,15-disulfo-12-(3-sulfopropyl)-, inner salt, ion(2-) (9CI) (CA INDEX
 NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:429116 HCAPLUS Full-text
 DOCUMENT NUMBER: 137:2738
 TITLE: Sulfonated diarylrhodamine dyes, their synthesis and
 use for labeling biomolecules for use in bioassays
 INVENTOR(S): Menchen, Steven M.; Benson, Scott C.; Lam, Joe Y. L.;
 Zhen, Weiguo; Sun, Daqing; Rosenblum, Barnett B.;
 Khan, Shaheer H.; Taing, Meng
 PATENT ASSIGNEE(S): PE Corporation (NY), USA
 SOURCE: PCT Int. Appl., 108 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002044416	A2	20020606	WO 2001-US44475	20011127
WO 2002044416	A3	20021031		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6583168	B1	20030624	US 2000-724855	20001128
AU 2002019896	A5	20020611	AU 2002-19896	20011127
EP 1339798	A2	20030903	EP 2001-998658	20011127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004514727	T2	20040520	JP 2002-546764	20011127
PRIORITY APPLN. INFO.:				
			US 2000-724855	A 20001128
			US 1997-978775	A3 19971125
			US 1998-199402	A3 19981124

OTHER SOURCE(S): MARPAT 137:2738

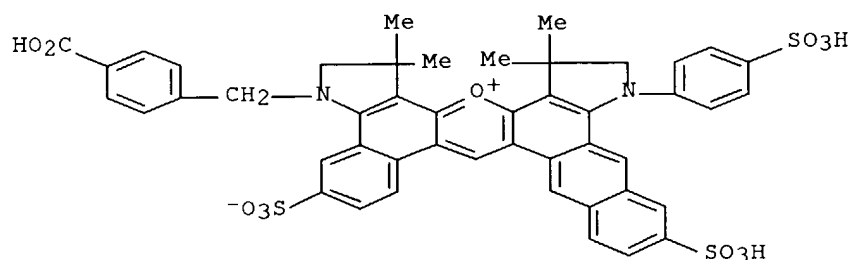
AB Sulfonated diarylrhodamine compds. are useful as fluorescent labels of nucleosides, nucleotides, polynucleotides, and polypeptides. The compds. find particular application in the area of fluorescent nucleic acid anal., e.g., automated DNA sequencing and fragment anal., detection of probe hybridization in hybridization arrays, detection of nucleic acid amplification products, and the like. Thus, a sulfonated benzonaphthorhodamine dye was prepared from N-propylsulfonate naphthoindoline and formylbenzoindoline.

IT 433714-09-1P 433714-10-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(sulfonated diarylrhodamine dyes, their synthesis and use for labeling biomols. for use in bioassays)

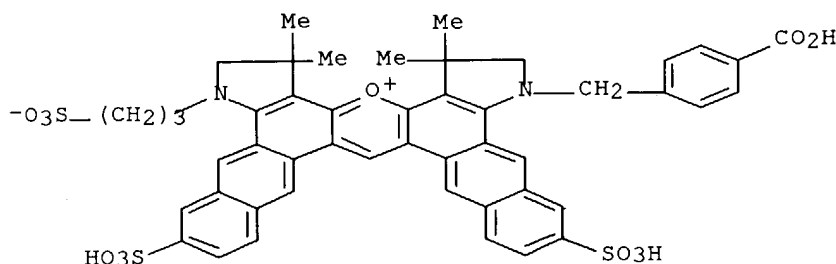
RN 433714-09-1 HCAPLUS

CN Benzo[g]naphtho[2,3-g']pyrano[2,3-e:6,5-e']diindol-8-ium,
5-[(4-carboxyphenyl)methyl]-5,6,7,9,10,11-hexahydro-7,7,9,9-tetramethyl-
3,14-disulfo-11-(4-sulfohenyl)-, inner salt (9CI) (CA INDEX NAME)



RN 433714-10-4 HCAPLUS

CN Dinaphtho[2,3-g:2',3'-g']pyrano[2,3-e:6,5-e']diindol-9-ium,
6-[(4-carboxyphenyl)methyl]-6,7,8,10,11,12-hexahydro-8,8,10,10-tetramethyl-
3,15-disulfo-12-(3-sulfopropyl)-, inner salt (9CI) (CA INDEX NAME)



L14 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:293665 HCAPLUS Full-text
DOCUMENT NUMBER: 136:305109

TITLE: Synthesis of fluorescent nucleobase conjugates having
anionic linkers and their use in nucleic acid
sequencing

INVENTOR(S): Taing, Meng; Khan, Shaheer; Menchen, Steven;
Rosenblum, Barnett

10/602,974

PATENT ASSIGNEE(S): PE Corporation (NY), USA
 SOURCE: PCT Int. Appl., 143 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002030944	A2	20020418	WO 2001-US31822	20011011
WO 2002030944	A3	20030116		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002013125	A5	20020422	AU 2002-13125	20011011
US 2002102590	A1	20020801	US 2001-976168	20011011
EP 1317464	A2	20030611	EP 2001-981488	20011011
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004529070	T2	20040924	JP 2002-534329	20011011
PRIORITY APPLN. INFO.:			US 2000-239660P	P 20001011
			WO 2001-US31822	W 20011011

OTHER SOURCE(S): MARPAT 136:305109

AB Provided are nucleotide-dye conjugates and related compds. in which a dye is linked to a nucleobase directly or indirectly by an anionic linker. The anionic character of the linker is provided by one or more anionic moieties which are present in the linker, such as phosphate, phosphonate, sulfonate, and carboxylate groups. When the dye is provided as a donor/acceptor dye pair, the anionic linker can be located between the donor and the acceptor, or between the nucleobase and either the donor or acceptor, or both. Synthetic protocols are provided for preparing various conjugates. The nucleobase-dye conjugates are suited for any method utilizing fluorescent detection, particularly methods requiring simultaneous detection of analytes which are not well separated by electrophoresis. The present invention is particularly well suited for detecting classes of polynucleotides that have been subjected to a biochem. separation procedure, such as electrophoresis. In one embodiment, conjugates of the invention provide enhanced electrophoretic mobility characteristics to sequencing fragments, e.g., for dideoxy sequencing using labeled terminators.

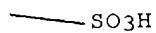
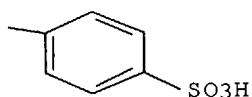
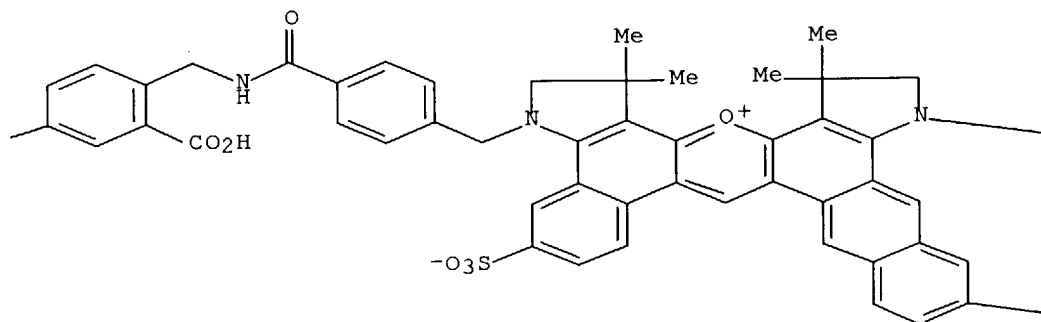
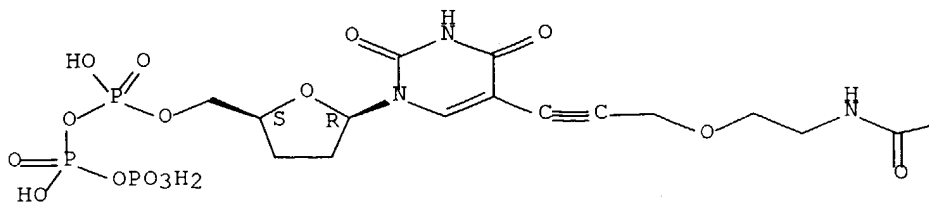
IT 412031-37-9P

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (synthesis of fluorescent nucleobase conjugates having anionic linkers and their use in nucleic acid sequencing)

RN 412031-37-9 HCAPLUS

CN Benzo[g]naphtho[2,3-g']pyrano[2,3-e:6,5-e']diindol-8-ium,
 5-[[4-[[[2-carboxy-4-[[[2-[[3-[1,2,3,4-tetrahydro-2,4-dioxo-1-[(2R,5S)-
 tetrahydro-5-(3,5,7,7-tetrahydroxy-3,5,7-trioxido-2,4,6-trioxa-3,5,7-
 triphosphahept-1-yl)-2-furanyl]-5-pyrimidinyl]-2-
 propynyl]oxy]ethyl]amino]carbonyl]phenyl]methyl]amino]carbonyl]phenyl]meth
 yl]-5,6,7,9,10,11-hexahydro-7,7,9,9-tetramethyl-3,14-disulfo-11-(4-
 sulfophenyl)-, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

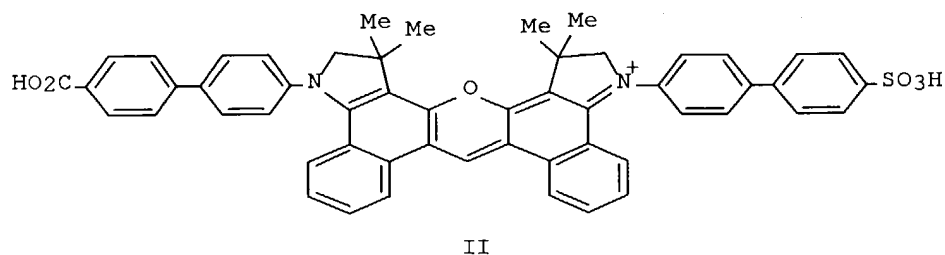
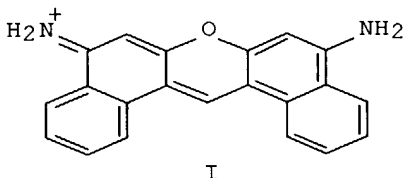


L14 ANSWER 4 OF 5 HCAPLUS. COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2000:253036 HCAPLUS Full-text
 DOCUMENT NUMBER: 132:295119
 TITLE: Dibenzorhodamine dyes
 INVENTOR(S): Benson, Scott Conrad; Lam, Joe Y. L.; Upadhya, Krishna
 Gajanan; Radel, Peggy Ann; Zhen, Weiguo; Menchen,
 Steven Michael
 PATENT ASSIGNEE(S): The Perkin-Elmer Corporation, USA
 SOURCE: U.S., 36 pp., Cont.-in-part of U.S. 5,936,087.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent

LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6051719	A	20000418	US 1998-193374	19981117
US 5936087	A	19990810	US 1997-978775	19971125
EP 1408090	A1	20040414	EP 2004-878	19981117
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
US 2002034761	A1	20020321	US 2001-969430	20011002
US 6566071	B2	20030520		
US 2004072209	A1	20040415	US 2003-441950	20030520
JP 2004107331	A2	20040408	JP 2003-300011	20030825
PRIORITY APPLN. INFO.:			US 1997-978775	A2 19971125
			EP 1998-958069	A3 19981117
			JP 2000-522168	A3 19981117
			US 1998-199402	A3 19981124
			US 2000-556040	A1 20000420
			US 2001-784943	A3 20010214
			US 2001-969430	A1 20011002

OTHER SOURCE(S): MARPAT 132:295119
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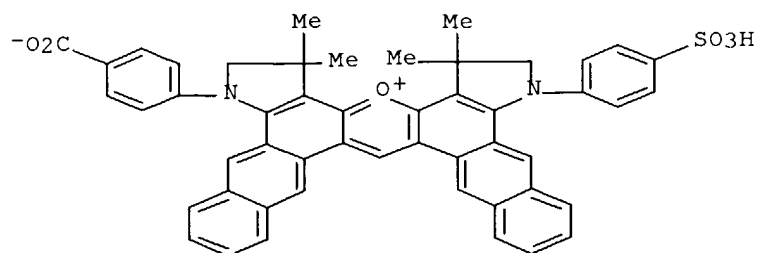


AB Dibenzorhodamine dyes useful as fluorescent labeling reagents, especially for nucleosides, have the basic structure I, which may be substituted at any position except position 7. For example, 3,1-MeOC10H6NH2 was acylated with Me2CBrCOCl, cyclized, and reduced with LiAlH4 to give 2,3-dihydro-4-methoxy-3,3-dimethyl-1H-benz[g]indole, which was arylated sep. with 4-bromobiphenyl and with Me 4-(4-bromophenyl)benzoate by use of a Pd complex catalyst. Both products were demethylated with AlCl3, the former was formylated and cyclocondensed with the latter, the product was subjected to acidic hydrolysis of the ester group, and the asym. product was chromatog. separated from the 2 sym. products. The resulting monocarboxylic acid was sulfonated to give Joda 4 (II).

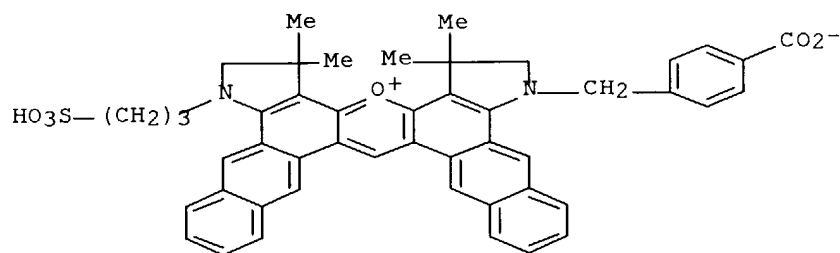
IT **226073-04-7 264190-54-7 264190-55-8**

RL: TEM (Technical or engineered material use); USES (Uses)
 (preparation of dibenzorhodamine dyes useful as fluorescent labeling agents)

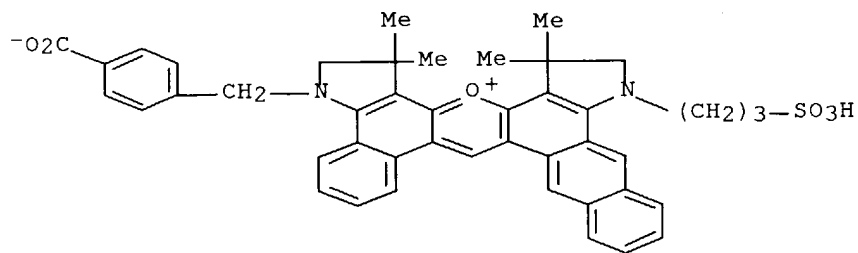
RN 226073-04-7 HCAPLUS
 CN Dinaphtho[2,3-g:2',3'-g']pyrano[2,3-e:6,5-e']diindol-9-ium,
 6-(4-carboxyphenyl)-6,7,8,10,11,12-hexahydro-8,8,10,10-tetramethyl-12-(4-sulfophenyl)-, inner salt (9CI) (CA INDEX NAME)



RN 264190-54-7 HCAPLUS
 CN Dinaphtho[2,3-g:2',3'-g']pyrano[2,3-e:6,5-e']diindol-9-ium,
 6-[(4-carboxyphenyl)methyl]-6,7,8,10,11,12-hexahydro-8,8,10,10-tetramethyl-12-(3-sulfopropyl)-, inner salt (9CI) (CA INDEX NAME)



RN 264190-55-8 HCAPLUS
 CN Benzo[g]naphtho[2,3-g']pyrano[2,3-e:6,5-e']diindol-8-ium,
 5-[(4-carboxyphenyl)methyl]-5,6,7,9,10,11-hexahydro-7,7,9,9-tetramethyl-11-(3-sulfopropyl)-, inner salt (9CI) (CA INDEX NAME)



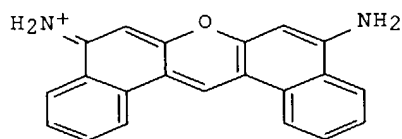
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1999:355838 HCAPLUS Full-text
 DOCUMENT NUMBER: 131:20247
 TITLE: Preparation of dibenzorhodamine dyes useful as fluorescent labeling agents

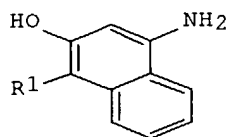
INVENTOR(S): Benson, Scott Conrad; Lam, Joe Y. L.; Upadhy, Krishna
 Gajanan; Radel, Peggy Ann; Zhen, Weiguo; Menchen,
 Steven Michael
 PATENT ASSIGNEE(S): The Perkin-Elmer Corporation, USA
 SOURCE: PCT Int. Appl., 89 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9927020	A1	19990603	WO 1998-US24626	19981117
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5936087	A	19990810	US 1997-978775	19971125
CA 2311476	AA	19990603	CA 1998-2311476	19981117
AU 9914182	A1	19990615	AU 1999-14182	19981117
AU 742571	B2	20020110		
EP 1034221	A1	20000913	EP 1998-958069	19981117
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JP 2001524493	T2	20011204	JP 2000-522168	19981117
EP 1408090	A1	20040414	EP 2004-878	19981117
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
US 2002034761	A1	20020321	US 2001-969430	20011002
US 6566071	B2	20030520		
US 2004072209	A1	20040415	US 2003-441950	20030520
JP 2004107331	A2	20040408	JP 2003-300011	20030825
PRIORITY APPLN. INFO.:			US 1997-978775	A 19971125
			EP 1998-958069	A3 19981117
			JP 2000-522168	A3 19981117
			WO 1998-US24626	W 19981117
			US 1998-199402	A3 19981124
			US 2000-556040	A1 20000420
			US 2001-784943	A3 20010214
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OTHER SOURCE(S): MARPAT 131:20247
 GI



I



II

AB Dibenzorhodamine compds. I are disclosed, including nitrogen- and aryl-substituted forms. In addition, intermediates II (R1 = H, COY with Y = H, lower alkyl, lower alkene, lower alkyne, aromatic, Ph, polycyclic aromatic, heterocycle, water-solubilizing group, or linking group) are disclosed. When R1 is H, the C-12-bonded nitrogen and the C-12 and C-13 carbons form a first ring structure having from 4 to 7 members, and/or the C-12-bonded nitrogen and the C-11 and C-12 carbons form a second ring structure having from 5 to 7 members. The invention further includes

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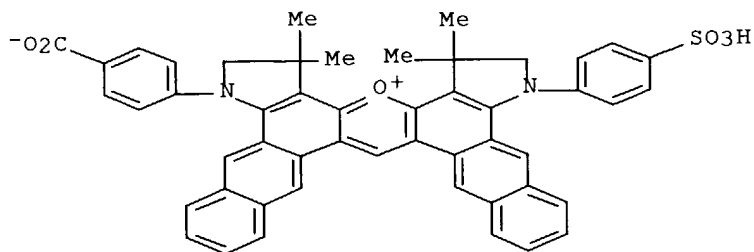
energy transfer dyes comprising the dibenzorhodamine compds., nucleosides labeled with the dibenzorhodamine compds., and nucleic acid anal. methods employing the dibenzorhodamine compds.

IT 226073-04-7P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of dibenzorhodamine dyes useful as fluorescent labeling agents)

RN 226073-04-7 HCAPLUS

CN Dinaphtho[2,3-g:2',3'-g']pyrano[2,3-e:6,5-e']diindol-9-ium, 6-(4-carboxyphenyl)-6,7,8,10,11,12-hexahydro-8,8,10,10-tetramethyl-12-(4-sulfophenyl)-, inner salt (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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